



Credit protection and lending relationships[☆]

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ARTICLE INFO

Article history:

Received 29 February 2012

Received in revised form 26 August 2012

Accepted 20 December 2012

Available online 5 January 2013

JEL classification:

G2

G3

Keywords:

Credit default swaps

Credit derivatives

Credit risk transfer

Financial innovation

Empty creditor problem

ABSTRACT

We examine the impact of credit default swaps (CDS) on lending relationships and credit market efficiency. CDS insulate lenders against losses from forcing borrowers into default and liquidation. This improves the credibility of foreclosure threats, which can have positive implications for borrower incentives and credit availability *ex ante*. However, lenders may also abuse their enhanced bargaining power vis-à-vis borrowers and extract excessive rents in debt renegotiations. If this hold up threat becomes severe, borrowers will be reluctant to agree to debt maturity designs or control rights transfers that would have been optimal in the absence of CDS markets. The introduction of CDS markets may then ultimately tighten credit constraints and be detrimental to welfare. Our analysis yields a number of empirical implications, some of which have been tested.

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1. Introduction

The credit risk transfer market, and the market for credit default swaps (CDS) in particular, experienced a spectacular rise and fall over the past two decades. Similar to other risk transfer instruments, CDS can facilitate efficient risk sharing and as such expand the extension of credit to the real sector and enhance welfare.

[☆] This is a heavily revised version of Arping (2004). I would like to thank the editor, Thorsten Beck, and two anonymous referees for very helpful comments. I also thank Daniel Bergstresser, Urs Birchler, Jürg Blum, Arnoud Boot, Stijn Claessens, Erasmo Giambona, Denis Gromb, Michel Habib, Robert Hauswald, Gyongyi Loranth, Ian Marsh, Janet Mitchell, Pierre Monnin, Charlotte Ostergaard, Bruno Parigi, Enrico Perotti, Rafael Repullo, Giancarlo Spagnolo, Javier Suarez, Elu von Thadden, Xavier Vives, Wolf Wagner, Alexandre Ziegler, and seminar participants at the CEPR/BBVA conference “Will Universal Banking Dominate or Disappear?” (Madrid, November 2002), University of Amsterdam, Judge Business School, the ECB/CFS symposium “Capital Markets and Financial Integration in Europe” (Frankfurt, May 2004), the 1st FIRS conference on Banking, Insurance, and Finance (Capri, May 2004), the BIS/CEPR/JFI workshop “Accounting, Transparency, and Bank Stability” (Basel, May 2004), and the 2004 EFA meetings in Maastricht for their comments. The usual disclaimer applies. An earlier version of this article circulated under the title “Playing Hardball: Relationship Banking in the Age of Credit Derivatives”.

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However, CDS can also have costs.¹ Critics point to, among other things, problems arising from the opaqueness of CDS markets, the potential negative effect on banks' monitoring incentive, and lenders' reduced incentive to support their borrowers in difficult times when being protected against losses from default.² While the debate about the costs and benefits of CDS is a long-standing one, it recently became more intense in the wake of the ongoing financial crisis.

Against this background, the aim of the present paper is to analyze the impact of CDS protection on lending relationships and credit market efficiency. We do so in the context of a simple model where loan performance is subject to borrower moral hazard. Our starting point is the observation that CDS protection can make lenders tougher in debt renegotiations. By insulating lenders against losses from default, CDS protection improves lenders' threat point payoff from letting renegotiation fail and forcing borrowers into default and liquidation. We argue that lenders' enhanced bargaining power through CDS protection can have

¹ See Stulz (2010) for an account of the debate and a nuanced discussion of the costs and benefits of CDS.

² See, e.g., Scott-Quinn and Walmsley (1998) and, more recently, Hu and Black (2008) who coined the term “empty creditor” problem to describe situations where protected lenders have limited economic exposure to borrowers while at the same time holding important liquidation and restructuring rights.

positive or negative implications for borrower incentives *ex ante*. On the one hand, faced with a more credible threat of foreclosure, borrowers may have an incentive to act less opportunistically in an attempt to make it less worthwhile for their lenders to exercise foreclosure threats. On the other hand, lenders could abuse their enhanced bargaining power and extract excessive rents in debt renegotiations. If this hold up threat becomes severe, it could override the aforementioned disciplining effect. The introduction of CDS markets may then ultimately tighten credit constraints and be detrimental to welfare.

In our base model without CDS protection, a penniless owner-manager run firm needs to borrow funds from a lender for a project. The likelihood of project success depends on the borrower's non-contractible effort and the realization of exogenous uncertainty. This exogenous uncertainty is resolved at an interim stage before project maturity. In bad states of the world, it is efficient to close down the project at the interim stage and liquidate assets in place. However, early termination is privately costly for the borrower. Therefore, if the lender did not have the unilateral right to terminate the project he would have to share the liquidation proceeds with the borrower to overcome her aversion against early closure. As the lender would receive less in bad states of the world, he would demand a higher interest rate. This would be inefficient as it would entail an additional distortion of the borrower's incentive to exert effort. Short-term debt financing allows the parties to resolve this problem. With short-term debt, the lender can simply force default at the interim stage by not rolling over debt, which in turn entitles him to seize project assets.

Suppose now that the lender has the possibility to purchase a CDS vehicle that would entitle him to receive a payout in the event of default and liquidation. What happens at the interim stage? In bad states of the world, the lender will force default and liquidation, as above. He will also reap the protection payout. In exchange, he pays the protection seller a fair premium upfront. So in bad states of the world nothing much changes. The key observation is that CDS protection may change the terms of trade in good states of the world where continuation is efficient. As CDS protection rewards the lender for forcing default, the lender will be less inclined to let the borrower continue even if doing so would be efficient. Knowing this—and anticipating the lender's CDS trade—the borrower may be inclined to work harder in an attempt to make it less worthwhile for the lender to exercise the termination threat. In other words, CDS protection can have a desirable commitment effect on borrower incentives. In the absence of CDS protection, the lender will be reluctant to terminate the borrower's project following opportunistic behavior as part of his investment outlay will be sunk at the interim stage. CDS protection resolves this credibility problem by effectively rewarding the lender for exercising the termination threat.

However, CDS protection also has a cost: it may enable the lender to extract additional surplus even if the borrower sticks to her side of the bargain and exerts efficient effort. If this *ex post* hold up threat becomes sufficiently severe the borrower's incentive to exert effort will be severely stifled. This, in turn, will make the lender unwilling to finance the project with short-term debt in the first place. The parties will have to resort to “covenant-lite” long-term debt under which the lender is not entitled to force pre-mature liquidation. Yet, covenant-lite long-term debt is inefficient as in bad states of the world the lender will have to share the liquidation proceeds with the borrower to overcome her aversion against early project closure. Due to this inefficiency, long-term debt financing may not be feasible either. As a result, financial innovation—the introduction of a “CDS technology”—may, in extreme cases, lead to a breakdown of the credit market.

The excessive rent extraction problem of credit protection would not arise if the lender could credibly commit to abstain from taking more than some “desired” level of protection. One can think of several circumstances where such a commitment could be feasible. First, CDS protection might be contractible between lenders and borrowers. In practice, however, this is unlikely to be the case due to CDS market opaqueness and limits to complete contracting. Second, lenders could be required to disclose CDS trades. As we will show in Section 4, mere observability of CDS trades to borrowers may be sufficient to achieve commitment. Third, debt renegotiation may not be feasible due to bargaining imperfections. In the presence of *ex ante* uncertainty about the feasibility of renegotiation, taking “excessive” protection may be suboptimal for the lender as it may entail a prohibitively high premium. This is because protection sellers are willing to advance protection against relatively low premia only if they can be assured that termination threats are ultimately not exercised in states of the world where continuation is efficient. Yet, if the lender's level of protection is excessive and debt renegotiation where the lender could sort out matters with the borrower turns out to be infeasible, the project will be terminated not only in bad states of the world but also in good states. This will result in a very high premium, which in turn deters the lender from taking excessive protection in the first place.

Our analysis yields several empirical implications. In our model, firms with relatively low levels of asset tangibility and firms where debt renegotiation is more cumbersome are more prone to benefit from CDS protection. To the extent that debt renegotiation is more difficult at large firms—i.e., firms that often have relatively complex and dispersed financial structures—this may suggest that the benefits of CDS protection could be confined to relatively large firms, as documented by [Hirtle \(2009\)](#). The analysis also has implications for loan contract design. Borrowers that would suffer from the excessive rent extraction problem of CDS protection should be reluctant to agree to debt maturity designs and control right transfers that would enable their lenders to impose foreclosure threats in the first place. Following the introduction of CDS markets, one would thus expect a lengthening a debt maturities in the cross-section of borrowers. This appears to be consistent with empirical evidence reported in [Saretto and Tookes \(2012\)](#).

This paper complements a growing literature on the corporate finance implications of credit derivatives and credit risk transfer at large.³ [Pennacchi \(1988\)](#), [Carlstrom and Samolyk \(1995\)](#), [Gorton and Pennacchi \(1995\)](#), [Morrison \(2005\)](#), [Marsh and Wagner \(2006\)](#), and [Parlour and Plantin \(2008\)](#), among others, analyze credit risk transfer in models where lenders are subject to institutional risk aversion due to capital constraints or financial distress concerns. In these models, risk transfer can facilitate efficient risk sharing and diversification. Part or all of these benefits may accrue to the real sector in terms of improved access to credit and lowered funding costs. The downside of risk transfer is that it may undermine lenders' incentive to perform monitoring or other value-enhancing activities. A key policy insight of this literature is that efficient risk transfer requires lenders retaining sufficient economic exposure to their borrowers (“skin in the game”). One contribution of our paper relative to this literature is to show that risk transfer can have benefits even when the traditional motive for risk transfer due to lender risk aversion plays no role. [Duffee and Zhou \(2001\)](#) study risk transfer vehicles in an adverse selection context. In their model, CDS provide more flexibility than loan sales in terms of minimizing

³ There also is an emerging general equilibrium literature studying the impact of CDS on asset prices. See, among others, [Geanakoplos \(2009\)](#), [Che and Sethi \(2010\)](#), and [Fostel and Geanakoplos \(2011\)](#).

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